



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/654,768	09/04/2003	Peter J. Suttie	67,036-025; B05756-AT6	6696
26096 7590 09/12/2007 CARLSON, GASKEY & OLDS, P.C. 400 WEST MAPLE ROAD SUITE 350 BIRMINGHAM, MI 48009			EXAMINER DESCHERE, ANDREW M	
			ART UNIT 2836	PAPER NUMBER
			MAIL DATE 09/12/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/654,768

Applicant(s)

SUTTIE, PETER J.

Examiner

Andrew M. Deschere

Art Unit

2836

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13, 15, 17 and 18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1, 2, 4, 8, 9, 11 and 13 is/are allowed.
- 6) ☒ Claim(s) 3, 5-7, 10, 12, 15, 17 and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

The amendment filed 6 June 2007 has amended claims 1 and 9, and cancelled claims 14 and 16. Claims 1-13, 15, 17, and 18 are currently pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5, 6, 10, 15, 17, and 18 rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent 6,278,262 ("Ullyott") in view of United States Patent 6,472,774 ("Bedouet").

Ullyott discloses an APU system. A controller controls the rotational speed of the APU to match the steady-state rotational speed of a primary generator. The controller then connects the APU to both the load and primary generator and subsequently removes the primary generator (Abstract). The controller causes the APU to gradually accelerate when matching the frequency of the electrical generator (column 4, lines 14-19); the "controlled excursion" of the APU is shown in Figure 3 (column 3, lines 55-60). Electronic controller 26 is communicatively connected to breaker 22 for primary AC source 30 and APU controller 24 (Figure 1). The APU system may be used to provide back-up power to the electrical power system of an aircraft (column 1, lines 21-23).

Art Unit: 2836

Ulliyott discloses an APU system with frequency and speed matching according to a primary generator that provides power to a load once the APU speed has been increased to a set level (Ulliyott, column 1, lines 46-58), but does not teach that a load device may be shut down during power transfer. Bedouet teaches a device for energy management, particularly drawn to supplying electrical equipment on an aircraft (Bedouet, column 1, lines 6-11). Certain events, such as a loss of engine power, starting of engines, or a partial system failure, may reduce available electric power in an aircraft. In such an event, the device carries out load shedding, removing electrical power from components least critical to the operation of the aircraft (column 1, lines 21-38). A combination of Ulliyott and Bedouet would provide load shedding during starting of engines (power transfer). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the APU system with the load shedding of Bedouet to provide a high level of security to the aircraft and its passengers by prioritizing and shedding loads when a reduced electrical power level is available (column 2, lines 17-27).

Claims 3 and 12 rejected under 35 U.S.C. 103(a) as being unpatentable over Ulliyott and Bedouet in view of United States Patent 4,456,830 ("Cronin").

Although Ulliyott discloses a controlled acceleration of the APU, keeping the acceleration below a determined "rate limit" is not taught. Cronin teaches the use of logic schedules to control the rate of change of frequency and voltage when bringing a generator up to speed (column 5, lines 46-62). This controlled rate of change while synchronizing an APU with a generator is stated by Cronin to be "well understood by those versed in the art". It would have been obvious to one of ordinary skill in the art at the time of the invention to limit the rate at

Art Unit: 2836

which the APU of Ulliyott is accelerated in order to avoid mechanical stress and malfunction caused by overly rapid acceleration.

Claim 7 rejected under 35 U.S.C. 103(a) as being unpatentable over Ulliyott and Bedouet in view of United States Patent 6,365,982 ("Iles"). Ulliyott discloses an APU system with frequency and speed matching according to a primary generator, but does not teach the use of a look-up table that corresponds target APU speed with APU frequency. Iles teaches that a look-up table may be used with an engine. The look-up table matches a desired speed with a frequency. The speed to be set is linked to an engine operating state, such as idle (Abstract). It would have been obvious to one of ordinary skill in the art at the time of the invention to use a look-up table in the invention of Ulliyott so that gradual, controlled acceleration of an APU may be implemented in a system using discrete control.

Response to Arguments

Applicant's arguments filed 6 June 2007 have been fully considered but they are not persuasive. Applicant argues, "APU use is not mentioned in the Bedouet patent. Thus, there is no apparent reason why one would provide Ulliyott with the control of shedding electrical requirements...". Examiner respectfully traverses. Although Bedouet does not explicitly disclose the use of an APU, there is a teaching for certain events that change the available power in an aircraft electrical system, and exemplary conditions are suggested (Bedouet; column 1, lines 17-57). Loads are managed as a function of the availability of electrical power on an electrical distribution network. As disclosed by Bedouet, potential events that would cause load shedding include loss of engine power and starting of engines. In light of such

Art Unit: 2836

events, the Examiner believes that one of ordinary skill in the art at the time of the invention would consider the starting of an APU a condition that would require a reduction of loads.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Allowable Subject Matter

Claims 1, 2, 4, 8, 9, 11, and 13 allowed.

The following is an examiner's statement of reasons for allowance: independent claims 1 and 9 now incorporate the subject matter of cancelled claims 14 and 16. Claims 14 and 16 were previously indicated to contain allowable subject matter.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Griffith (US 3,764,814) discloses control for an APU that can reduce the load to maintain a constant frequency. Vershure (US 4,819,423) discloses an APU usable for

Art Unit: 2836

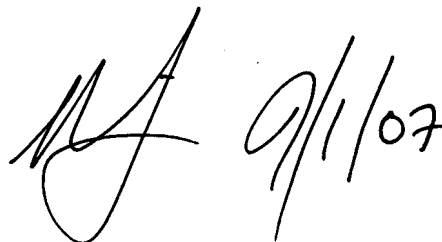
emergency power. Faulkner (US 4,370,560) discloses an APU with a controller to vary the load to minimize transients.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew M. Deschere whose telephone number is (571) 272-8391. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on (571) 272-2800 x36. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AMD

A handwritten signature, possibly reading 'MS', followed by the date '9/1/07'.